

EXHIBIT 2

Timeline of Measured Conditions Compared to Ships Log

The ship's log book contains onboard observations of wind and wave conditions, at two hour intervals throughout the transit. Methods used to obtain the values in the log book are not known with certainty.

Many ships are outfitted with a wind anemometer with digital readout. This usually gives the wind speed and direction relative to the ship movement so wind speeds can be low or high depending on ship speed and heading relative to the wind. For most of the transit, the *Ocean Ranger* was at or below 5 knots speed with head winds, on or winds slightly off the bow. So observed wind speeds could be slightly high.

Ships are usually not equipped with devices to measure waves, so sea state estimates generally rely on visual observation. These are highly subjective as the vessel is moving and there is no vertical height reference relative. Observations are especially difficult at night.

Figures 9 and 10 show the timeline of the transit for winds and waves. Measured values at each data buoy as the tow passed are indicated by red squares; shipboard observations are indicated by gray dashed lines. While the data buoy measurements are unambiguous, the shipboard observations in the ship's log often have a range of values. The graphs indicate the upper and lower range of observations when a range was indicated. Observations of waves typically had a 2 foot range of uncertainty while wind speeds often had no range.

From Figure 9 for wind speeds, there is generally good agreement between the ship board observations and the data buoy measurements. The three main wind events are clearly defined: one late on 19 October while the tow was off the southern Washington coast and Columbia river, one over the 23rd and 24th when the tow had just passed Pt Arena, CA, and on the 25th as the tow passed Pt Reyes and was near San Francisco.

Of particular note are high winds up to 40 knots observed in the morning of 24 October. This occurred while the tow was between data buoys and cannot be validated with direct measurement. But according to ships log, the vessel experienced winds over 30 kts for 22 hours, and winds of 40 kts for 6 hours.